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ABSTRACT

Education is constantly criticized for its "failures"--its "failure" to produce literate graduates, its "failure" to prepare students for the jobs of future technology, and its "failure" to reduce unemployment and establish equity for all students. However, these "failures" are not solely those of the schools, but of the larger society--a problem of the home, the schools, the corporations, and the government together. One criticism that has been leveled at vocational education is that it is too narrow; yet knowledge, skills, and attitudes, regardless of where they have been acquired, are not automatically transferred to other settings. Training must occur where the skills will be actually applied in order to be effective. However, such approaches can be expensive and difficult to implement. In order to serve students better, high schools should eliminate vocational tracking and provide both academic and vocational training for all students. Other factors that would enhance students' educational experiences would be changing courses to improve transferability of outcomes and acquiring better teachers and facilities through increased allocation of funding to schools. However, the schools cannot do it all. Home, school, work, and social groups must become true learning communities where youth have ready access to adult expertise, share their successes and failures, and where everyone has a proprietary interest in what goes on. These goals will not be easy to achieve, but they provide a vision toward which we can strive. (KC)

Determining Goals for Vocational Education

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Occasional Paper No. 96

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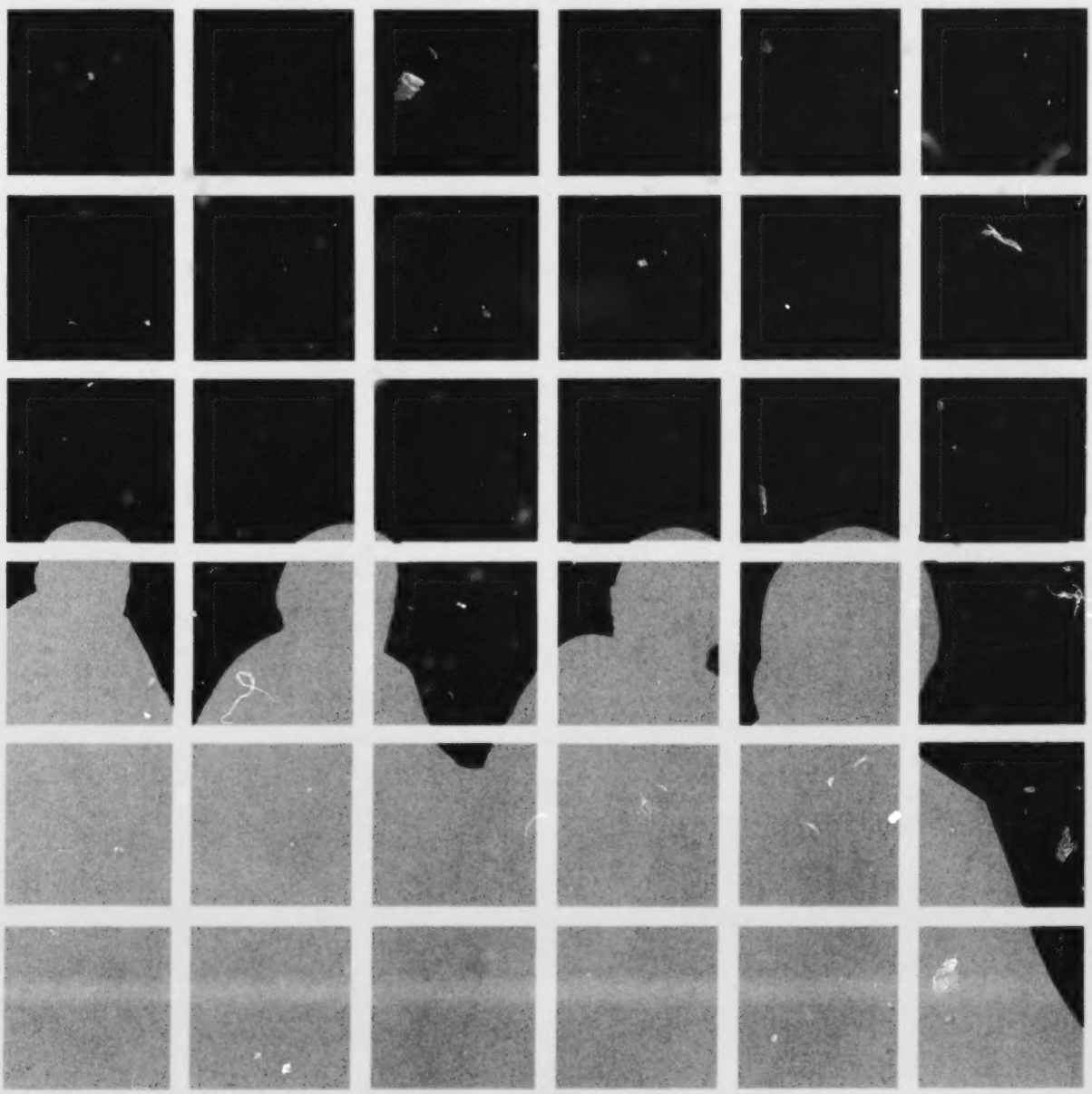

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DETERMINING GOALS FOR VOCATIONAL EDUCATION

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December 1983

FOREWORD

I first had the opportunity to become acquainted with Harry Silberman when he was serving as the associate commissioner for educational research in the U.S. Office of Education from 1970 to 1972. He was instrumental in providing some of the initial impetus and planning to the career education movement and the research that later emanated from that movement. He also served as director of the planning unit that ultimately resulted in the establishment of the National Institute of Education. He has a long and distinguished career in research having served as manager of the Educational Systems Department of Systems Development Corporation in Santa Monica and prior to that was a social scientist with the Rand Corporation. Harry has continued to show a great deal of interest in the problems of vocational education and education and work in general. He was editor of the recent National Society for the Study of Education Yearbook entitled *Education and Work* and authored several of the chapters. He also recently authored an article in *VocEd*, the journal of the American Vocational Association, on "Noneconomic Returns of Vocational Education.

His ideas are thoughtful and provocative. He brings an interesting perspective as a social scientist to vocational educations problems, even though he is not one that would normally be viewed as "a member of the vocational education establishment." Harry attended the Samuel Gompers Trade School in San Francisco before going onto the University of California-Los Angeles, where he earned his doctorate in educational psychology. Today, Harry is a Professor of Education in the Graduate School of Education at the University of California-Los Angeles.

Harry is an individual who understands vocational education from the inside out. He is also one who has maintained a continuing interest and perspective on education and the world of work. The National Center for Research in Vocational Education and The Ohio State University are pleased to present this paper to you as it was presented at the National Center on June 21, 1983 and we look forward to your comments on *Determining Goals for Vocational Education*.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

DETERMINING GOALS FOR VOCATIONAL EDUCATION

I have been asked by your executive director, Dr. Robert Taylor, to address the goals of vocational education. I suspect that the reason for this invitation was a short article I wrote for *VocEd* (Silberman 1980). In that article, I promoted the idea that vocational instruction in high schools should focus on general educational growth in such areas as personal competence, aesthetic expression, individual integrity, and cooperativeness, and on the development of a heightened sense of altruism.

When I wrote that piece I was aware that Congress was more interested in preparing students directly for jobs in order to promote greater equity and access. I was not opposed to those goals, but at the same time, I did not think that the goals I was interested in required students to sacrifice economic gains for self fulfillment. My approach was simply a more indirect way of getting there. Thus my focus was on improving the growth-enhancing qualities of existing vocational programs over which educators have authority and control, rather than emphasizing future job placements and earnings over which they can exercise little control.

In this paper, I plan to expand on that notion by first examining the present climate of criticism being aimed at education in general, and at vocational education in particular. Then I will present my views about some problems that lie beneath this criticism. I will close with a discussion of the educational goals that may begin to address these problems and some implications of these goals for vocational education.

Climate of Criticism

The Carnegie Council on Policy Studies in Higher Education (1979) recommended changing everything about vocational education, including its name. They recommended that the federal Vocational Education Act of 1963 should be renamed the Occupational Skills and Work-Study Act, and that it should provide incentives for moving skills training out of the high school classroom and into the work place or community college. Another report by The Commission on the Humanities (1980) echoed the sentiments of the Carnegie Council by finding greater value in postsecondary vocational education than in secondary vocational education—a level where it is assumed that the focus is limited to short-term training for specific technical occupations. Essentially the same message appeared in Adler's recent *Paideia Proposal* (Adler 1982) which recommended that all training for specific jobs and that all electives (except for a foreign language) be eliminated from the high school curriculum. According to Adler, training for particular jobs that do not require advanced education can be obtained in two-year community colleges, in technical institutes, or on the job itself.

The National Commission on Excellence in Education also viewed with alarm the tendency of students to choose easy nonacademic courses such as home economics and art appreciation instead of more demanding academic courses such as chemistry and foreign languages.[1] The true targets of their criticism, however, are general-track courses such as "Training for Adulthood" rather than vocational education courses. Yet another group, the National Task Force on Education for Economic Growth, concluded that the poor quality of U.S. public education is

jeopardizing the nation's economic and social well-being. By the time this paper is published I suspect several more commissions will have wrung their hands over the sorry state of public education.

I think such reports do impact vocational education.[2] The Huntington Beach school district in California drew national attention recently by eliminating all vocational programs and counseling services as an economic move.

The trend today is to return to a no-nonsense, strictly academic curriculum during the first twelve years of schooling. There seems to be a growing conviction among the people writing reports on education that vocational education at the high school level cannot keep up with the rapidly changing structure of industry, and that employers want secondary schools to provide broadly educated, intelligent workers who are dependable and motivated rather than narrowly trained technicians.

The area vocational schools and specialized secondary vocational schools have not received the criticism that has been directed to the regular and comprehensive high schools. The postsecondary vocational schools have also been spared; indeed the postsecondary vocational schools may benefit, at least in the short run, from the attempts to eliminate vocational education in the comprehensive high schools. Budget allocations for vocational education at postsecondary levels may actually benefit from secondary budget level cuts.

The criticism of elementary and secondary schools is a recurring phenomenon. Whenever achievement test scores decline because students spend less time on test-relevant activities, or because less able students stay in school longer than they used to, we worry and fret about the quality of our schools. It is interesting to note that although the overall test scores of students in the top quartile have declined during the past decade, scores in mathematics and science have actually improved for students in the lowest quartile. Such findings receive little attention in the press. Either we are achieving more equity in education, or the more able students are transferring to private schools or going to college at an earlier age. Of course there are other reasons for declining test scores. For example, there may be fewer gifted teachers. We have increased opportunities for capable women in a broader range of careers in medicine, law, and management. Thus the most capable women are now less likely to enter the teaching profession where the pay, status, and working conditions are less favorable.

Some of the criticism of public schools may also be exaggerated as a result of media stereotypes. In the annual Gallup Poll, people consistently give higher grades to the schools in their own community (which they are more familiar with) than to the schools in the nation. Negative stereotypes of the nation's schools normally appear during any national crisis. When Sputnik went up, we blamed the schools for not preparing our children as well as the Russians were preparing their children. When the Japanese began to challenge U.S industry in the international marketplace, we immediately pointed an accusing finger at our educational system.

One advantage of using the schools as a scapegoat is that it takes public attention away from the structural problems of American industry. It is easier to talk about eliminating school electives and requiring more academic solids. I have read too many "get tough" articles about going to the whip in the classroom. That solution has a bad track record. Besides, school authority to enforce standards is limited by the status of the school and by normative practices within the larger society.

Some Underlying Problems in Goal Setting

Many problems attributed to the schools or to vocational education within those schools, have their origin in economic arrangements in the wider society. And, as I concluded in a recent paper, we must ask ourselves whether our national policies are attempting to solve long-standing, deeply-rooted social problems with quick and easy school solutions without addressing the social contexts or the organizational structures that sustain the problems.

The major impetus to the current wave of concern about schooling stems from the international challenge to U.S. industry. By 1982, over 60 percent of the U.S. consumer electronics market had been captured by foreign imports. The U.S. automobile industry had lost almost 30 percent of its share of the U.S. market, and U.S. steel manufacturers had cut production and closed plants as the use of imported steel in this country rose from 0 percent to over 20 percent. We have read about new plant closures almost every week and we have achieved a record $42.7 billion trade deficit. In addition, our bankers have loaned over $43 billion dollars to third-world countries that are likely to default on their payments. Perhaps greed in the boardroom has as much to do with these problems as the "failure" of our schools to educate does. Decisions that place short-term profits and speculation ahead of needs for plant modernization; decisions to charge high prices for goods of inferior quality; and decisions to move high volume, mass production industries to countries where labor is cheaper may have as much bearing on our nation's high levels of unemployment as the lack of an adequate school system does.

The school system has played an important gate-keeping role in providing credentials and certificates that are used in dividing labor and distributing resources among our people. That system has produced an acceptable rationale for explaining the inequities in the work place as the schools are ostensibly meritocratic institutions that allocate benefits according to ability. Those with less ability are penalized with what Gordon Swanson refers to as a "short education." They must work harder to maintain their position at the rear of the certification line. That system seems to work well in an expanding, full-employment economy; at a time when the length of schooling seems to contribute to economic advancement. In a declining economy, however, the benefits of a "short education" are less apparent, as increased amounts of schooling are required for all jobs. Thus as almost everyone is forced to obtain a high school diploma, its value is diminished for all except those who do not have one. That is another source of our present dissatisfaction with the high school. Closing the gap between the educational levels of different groups does not produce a similar closing of the income gap. If we reach the stage where almost everyone has a bachelor's degree, we can expect growing disaffection with our colleges—for the same reason we are disaffected with the high schools—they will no longer serve a useful sorting function in allocating people to preferred roles.

The main difference between short and long education is not that one is vocational and the other is not. They are both vocational; but long education is preferred because it leads to better jobs. Better jobs are not defined by their productivity and contribution to the national economy; they are simply jobs with more prestige, more pay, and better working conditions. Robert Reich (1983) has noted that on the boards of American manufacturing companies, more than 65 percent of the seats are occupied by people who are trained in law, finance, or accountancy. Consequently, many problems that arise in business are not viewed as technical problems, but as problems of law or finance to be dodged through creative accounting and clever manipulation of rules or numbers. He described a U.S. economy in which resources circulate endlessly among giant corporations, investment bankers, and their lawyers, but few new resources are produced. He further noted that there is little investment in new products or processes:

> Paper entrepreneurialism relies on financial and legal virtuosity. Through shrewd maneuvering, accounting and tax rules can be finnessed and the numbers on balance sheets and tax returns manipulated, giving the appearance of greater or lesser earnings. Assets can be rearranged on paper to improve cash flow or to defer payments. And threatened lawsuits or takeovers can be used to extract concessions from other players. Huge profits are generated by those plays. They are the most imaginative and daring ventures in the American economy. But they do not enlarge the economic pie; they merely reassign the slices. (p. 52)

The separation of managers' personal financial incentives from the risky business of inventing new products for socially productive growth is seen as the source of our economic problems. Paper entrepreneurs produce nothing of tangible use, yet according to Reich "more and more, the career ambitions of America's best students have turned to professions that allow them to continue attending to symbols, from quiet offices equipped with a telephone, a Telex, and a good secretary. The world of real people, engaged in the untidy and difficult struggle with real production problems, becomes even more alien to America's best and brightest" (p. 58). Perhaps the pressure on schools would be alleviated if we moved some more engineers and inventive technicians back into the boardrooms of American companies.

Another problem underlying our present school crisis is the lack of consensus about goals. I think the popularity of the back-to-basics theme in recent reports by the National Commission on Excellence in Education lies not so much in the approach's likelihood of success in solving our economic problems as in its restoration of a sense of common purpose in American education. Having a clear set of goals takes much of the painful ambiguity out of our actions.

While some observers are calling for a return to the earlier goal of strict mental discipline as the sole outcome of schooling others adopt a more flexible view and argue that our goals should not be absolute. Instead these goals should themselves be evaluated by the consequences of spontaneous action. March (1972) recommended that we not always proceed with preexisting rational purposes as our goals change and are not necessarily consistent. He also suggested that a certain playfulness in acting on our intuitive impulses may help us discover new goals and, in retrospect, may provide an understanding of our earlier actions that at the time appeared irrational. From that perspective, planning can often become a way of interpreting past decisions to test hypotheses about our goals. We can infer our goals from the actions we have taken (e.g., because of our actions, the primary goal of much schooling appears by our actions to be the custodial care and protection of youth from responsibility and independence).

Perhaps the value of traditional practices is that they serve important but implicit common goals. Unless there is some consensus on goals, there is no room for discussion. For example, acceptance of mutual criticism within an agency or organization presupposes an acceptance of common standards of behavior. If different segments of a group hold different standards, then criticism between members of different segments can only be viewed as disruptive attack. Kanter (1972) pointed out that the enduring and successful communes during the nineteenth century all practiced some form of mutual criticism as an integral part of their governance structure. Analysis of the process of dissolution of such communities reveals that the practice of criticism fell into disuse a few years before the community dissolved. The segments of the community could no longer reach consensus about goals, so criticism became divisive.

Edson (1979) described the historical conflict in goals between middle-class educators whose traditional ideal of a "life career motive" is at variance with the goals of many working-class people who view work not in terms of ascending career stages, but rather as a series of jobs undertaken for immediate survival. This explains much of the difference between those who

desire short versus long education. In my own case, much against the advice of my teachers, I transferred out of a regular high school to attend Samuel Gompers Trade School in San Francisco because I had to support myself and needed a trade to get hired and accepted into the union. I saw no value in courses that prepared me for college. It seems so obvious to me that educational policymakers must examine the cultural and social realities facing students and be aware of their own culture and class-bound notions of schooling and work, or take their chance that their policies will be inadequate in solving problems of either education or work.

Admittedly, we can learn much about goals by observing existing or traditional educational practices. An alternative approach to determining goals, however, and one which becomes increasingly important in a rapidly changing society, is to explore future trends via demographic projections. From existing census data, we expect that the high school graduating class of 2000 will be relatively small compared to earlier cohorts. The labor force is projected to expand faster than the total population, so companies should be competing for the services of the members of the class of 2000. A larger proportion of that class will be black and Hispanic due to differential birth rates and a larger proportion will be bilingual. Almost half the new labor force entrants will be women.

On the demand side, technology may produce structural changes of two kinds. Many semiskilled jobs in the white-collar service sector may be deskilled or eliminated (e.g., bank tellers, cashiers, coders, bookkeepers, etc.), while other jobs will be created that demand highly advanced analytic and interpersonal skills that require long periods of professional training. Segmentation of the labor market will probably continue, and most high school graduates seeking employment will still go into white collar clerical sales or service work in the private sector.

We will still have wide individual differences in achievement among our students, and their academic aspirations concerning advanced degrees will still be positively related to their earlier achievement. There will continue to be wide differences in the quality and status of jobs depending on one's background, education, race, residence, and gender; but these differences probably will not be as great as they are today. Most labor market entrants will be quite mobile for a few years after high school, shopping for jobs they prefer until they get married and settle down. Many will move to smaller growing towns and cities in the Sunbelt. Those who find jobs that actively involve them in decision making and that provide interesting work with good wages will probably continue to have more positive attitudes toward their work than those with little autonomy who work for poor wages in low-level clerical, sales, or service positions.

The labor force will not only be larger, but also will have a higher median age. The post World War II baby boomers will be running things, so it will not be surprising to find greater participation by workers in decisions that affect them. The work place is likely to be less formal, less hierarchical, and more democratic. Business and industry will be more international, with greater mobility of workers across national boundaries. There will continue to be a conflict between corporate and family needs and there will be a much greater emphasis on ecology and conservation.

One implication of these changes is that more adult education offerings for older, part-time students will be required. Lifelong learning and retraining for such a population is already receiving considerable attention in the media. Another implication is that young people will need to be broadly educated. They must have the ability to read, write, analyze, compute, communicate, and evaluate. They must have technical skills and knowledge that prepares them not only for job entry, but also for continued learning and job advancement. They must also have

acquired personal skills and attitudes in order to deal with life in a cosmopolitan, multilingual society as independent but cooperating citizens. Interpersonal, recreation, and leisure skills will grow in importance. In such an environment, education must be more than merely a way to "get ahead." In a society where some job sharing and unemployment may be a permanent feature, it is especially important that people discover the joy of learning itself.

The Ends are Inherent in the Means

Regardless of how we derive our goals, there remains the task of choosing among them and connecting them with educational practices so that these practices may be implemented and evaluated. The National Center for Research in Vocational Education is already working on this task, as is Darcy (1980) who identified fourteen important goals but noted that "no broad consensus exists concerning the particular outcomes that should be used as criteria for evaluating vocational education." Mertens et al. (1980) reviewed vocational education evaluation studies and found seven employment variables, six education variables, and four ancillary variables being used as outcome measures. Interestingly, almost all the ancillary effects were assessed only at the secondary level; this suggests a point of difference between secondary and postsecondary goals. High schools may be more concerned with such general outcomes as aspirations, attitudes, values, feelings of success, and citizenship. Pratzner and Russell (1983) presented evidence that lends support to the difference between secondary and postsecondary goals. They observed a growing consensus that "vocational education at the secondary level should be integrated better with general education, and that emphasis should be on the development of broadly applicable skills useful to all students in a wide range of occupations" while "postsecondary institutions are being urged to work more closely with business and industry to emphasize and improve programs for highly specialized skill development, especially those needed in new and emerging occupations in the service sector and in high technology areas."

It would be convenient to determine the goals of programs at different levels by simply comparing their outcome measures, but we seldom see experimental designs in education evaluations that would permit unambiguous interpretation (Taylor 1982). Even with good designs the picture is not clear. When different programs bearing the same label and resembling each other in content produce different outcomes in students of the same background, ability, and motivation, we must look to differences in the quality of their instructional methods to explain their different outcomes. It is necessary to observe the program in operation to understand the outcomes. Dewey once said, "the ends are forecast in the means." Democratic outcomes are not achieved with authoritarian methods; problem-solving strategies are not obtained with rote teaching methods. Students learn to solve problems by solving problems, and they learn to invent new products by inventing new products. Thus they learn by doing.

While visiting schools, I have observed classes where students are apathetic and unresponsive, or are merely jumping hurdles to get good grades because they want to get ahead. I have also seen classes where students seem to take great joy in learning for its own sake. When a program is observed in its natural setting, it is possible to distinguish between its intrinsic and extrinsic purposes. The *intrinsic* purposes are the immediate consumption values which may be regarded as ends in themselves (e.g., stimulation, recreation, understanding). The *extrinsic* purposes are the utilitarian values of the program which may be regarded as a means for attaining future benefits (e.g., employment, income, labor supply, economic productivity). When we talk about vocational education as preparation for employment, we are focusing on economic outcomes that are extrinsic to the educational program and over which the program itself has limited influence. Vocational education is only one factor in helping people get and keep jobs.

When we speak of vocational education as an activity that immediately enhances the skills and personal development of individuals because of the character of the experience itself, then we are focusing on noneconomic outcomes that are intrinsic to the program and that are heavily influenced by the nature of the program.

Both extrinsic and intrinsic outcomes are important goals of vocational education, but at state and national levels of government (positions that are far away from actual training sites), extrinsic outcomes are more heavily emphasized. Preoccupied with economic development, policymakers at these levels view vocational education as a cure for a lagging economy or as a way of reducing youth unemployment. In actuality, such factors as aggregate labor demand, the size of the youth cohort, and the availability of alternative sources of income are more important determinants of youth employment. When aggregate demand is low and the youth cohort large, intensified training and placement efforts are more likely to *redistribute* unemployment than to change its level. Program evaluations, however, usually ignore such redistribution; they report placement rates but not associated displacement rates. There is little evidence that training programs increase aggregate demand.

As one moves closer to the local training sites where vocational education actually takes place, one finds greater emphasis on intrinsic goals.

Intrinsic Outcomes at the Secondary Level

Vocational education teachers at the secondary level are more likely to be concerned with the development of the individual student in three areas: (1) technical skills and knowledge, (2) communication skills and literacy, and (3) personal skills and attitudes.

Technical Skills and Knowledge

One way to determine the technical skills and knowledge that should be taught is to conduct labor market surveys and then perform job analyses in high-demand occupations. Thus if new courses in a given specialty are needed they can be added; if existing courses are no longer needed, they can be deleted. This approach usually does not produce qualitatively new offerings; instead it often adds or subtracts from existing courses. Local advisory committees may provide assistance in making decisions during this process, but in practice the popularity of a course or program, as indicated by the size of voluntary enrollments, is probably a more important influence on local program decisions than is systematic labor market information. Nevertheless, sufficient technical skills and knowledge should be acquired by *every* high school student in order to achieve competence in some occupational area whether or not he or she continues with additional education.

Communication Skills and Literacy

Employers repeatedly cite the lack of basic communication skills as a serious obstacle to youth employment. They want graduates who can read, write, and talk easily and well. Workers should be able to speak out confidently on their own behalf, to ask for help when they need it, to negotiate their differences, to read directions, to compute, and to write memoranda. Indeed, an employer's perception of a worker's competence may depend more on the worker's communication skills than on his or her technical competence. Similarly, employees' social skills may contribute more to the formation of clients' perceptions than their technical skills do, at

least in some occupations (Feldman and Wilson 1981). One of the most important requirements of any occupation is the ability to adjust one's self-presentation to fit a given situation, and this ability may depend on whether one has acquired the language skills demanded by the situation.

In reviewing studies of employment-related basic skills, Datta (1982) noted that reading, writing, and mathematical skills as measured by standardized tests bear little relation to those same functions as observed on the job. Thus the literacy needed for employability may differ from the literacy needed for further schooling. For example, most job-related reading involves using tables and figures and following directions. One looks up a fact in order to decide what to do in a given situation and then forgets it. This process is not the same as reading to learn something for later recall. Similarly, the mathematical skills used in school settings may differ from those used in work settings. Workers are likely to develop their own techniques rather than applying what they have learned in school. One implication of such findings is that in establishing goals for vocational education, one should not assume the total transfer of school-taught skills to applied settings. Clearly, goals related to the literacy and communication skills specific to different vocational areas need to be designed.

Personal Skills and Attitudes

The acquisition of appropriate personal skills and attitudes is just as important an outcome of vocational education as is the acquisition of technical and basic literacy skills. The personal attributes most frequently mentioned by writers, employers, and teachers as important to success in both work and life in general include the following.

- **Autonomy**—Employers and others value people who are mature, rational, inner-directed, independent, and responsible for their own actions. Such people, who think before they act, require minimal supervision. They can forego short-term gratification in favor of long-term lasting benefits. They are also capable of self-directed learning.

- **Courage**—Equally valued are people who can overcome their fears and confront their problems directly—doing what is necessary even if their actions are unpopular. They have the ability to cope with problem situations or emergencies. Such people do their duty when long-term interests are at stake even when the short-term consequences may be aversive. They are self-confident and not afraid to seek help from others when they need it.

- **Cooperativeness**—Most of us prefer those who are warm, friendly, and supportive. People who are prompt, dependable, loyal to the group, and conform to group norms in their dress, manners, and personal habits are good team members. Their employers describe them as having good interpersonal skills, good work habits, and positive attitudes. They accept supervision, and their behavior is consistent with the orderly conduct of business. They have good interpersonal relations and a strong sense of community.

Obviously, these three qualities are present to some extent in everyone. They are not the outcomes of a particular educational program but rather are synthesized through the interaction of environment with the total history of the individual. These personal qualities—cumulatively referred to as "character"—are a person's most valuable possessions. Indeed, they determine one's happiness in life. Personal qualities alter the success and fulfillment that is possible in all life settings—at home, in marriage and family relationships, at school, in social groups, and at work. People often fail to be admitted into work groups, are fired, or fail to be promoted because

they lack these personal qualities, rather than because they lack technical or communicative skills. Successful people often attribute their success to personal qualities rather than to technical competence, ability, or education (Ferguson 1982). These personal qualities have a distinct financial impact on work organizations, and behavior changes associated with the qualities can bring about cost savings through lower absenteeism and turnover and higher performance (Mirvis and Lawler 1977).

Personal qualities clearly influence and interact with basic communication skills and most job-related technical skills. For example, a prerequisite of clear writing is an attitude of openness and trust. Training itself has much to do with generosity and the act of giving. When training is ineffective, it is often because the instructor does not wish to give; not because he or she has nothing to give. It takes courage to give a student the opportunity to succeed when the instructor does not trust the learner's ability. Most students enter vocational education believing that to develop technical skills is to learn to work. As they progress, they redefine work, gradually shifting their emphasis from "doing to" to "doing for" their patron or client; thus they move from a concern with the acquisition of purely technical knowledge and skills to a recognition of the importance of helping others (Notkin 1972). In short, given the importance of these personal qualities, the effort to include personal skills and attitudes as goals for vocational education is certainly warranted.

The problem with personal development goals is that they are usually very idealistic and are couched in such vague terms that they cannot be evaluated. Most vocational instructors, if asked how they measure the personal development of their students, would probably refer to immediate changes in the face, voice, and posture of the student who is involved in an interesting and meaningful activity. Instructors assume that personal growth is occurring when, for example, students are eager to discuss their feelings and ideas, when they become so absorbed in their tasks that they fail to notice a stranger entering the room, and when they answer questions with pleasure in their voices. Teachers observe personal development when students begin to come to class early every day, when they participate in intense discussions about their work with other students, when they establish friendships and show concern for others, when they obviously take pride in tangible products or accomplishments, and when they give sustained attention to their educational activities and view them as forms of play. Students demonstrate personal growth when they go out of their way to help each other, when they accept the consequences of their decisions and quickly revise their approach when something does not work, when they negotiate their differences in amicable ways, when they appreciate the beauty of the things they build, and when they confidently plan and successfully complete a difficult project.

Educational Implications

School practices are heavily influenced by the larger society. The schools do not solve major social problems; they are affected by them. Weckstein (1983) expressed it as follows:

> Apart from funding, the internal practices of schools have always been deeply affected by the economy of the larger society. Tracking, testing, control over educational decision making, vocational education, and racial and class differences in school discipline cannot be understood apart from the economic structures that produce inequality, that concentrate economic power in a small number of huge corporations, that determine the number and nature of jobs, and that organize the world of work into a stratified, hierarchical system for which students must be sorted and prepared. (p. 421)

The inherent tension between our national goals of liberty and justice will always be reflected in the alternating demands on our schools for excellence and equity. We operate within the constraints of our society, and that society includes both elitist and egalitarian values. But forces from the larger society are not the only factors at work in the school. I believe that teachers still have some degree of freedom and control within the classroom, and that whether a particular course achieves a particular purpose depends upon what happens during the course.

Much of the debate between vocational and liberal arts advocates has to do with the generalizability or transferability of the two sets of outcomes. There is a confusion in discussions of this issue. Vocationalism is a state of mind—not a course label. Students taking academic, liberal arts courses may not grow in the least if they approach their course activities with a narrow, "hurdle-completion" mentality in which the only purpose is to get the certificate at the end of the sequence. How many students would continue to attend classes in our colleges and universities if we continued to offer our excellent instruction but ceased to offer the degree? Similarly, students taking specific training in a course on motorcycle maintenance or even in a tennis class, may become totally immersed in very fundamental questions about life. (Persig 1974 and Gallwey 1974). They may participate in course activities for their intrinsic values rather than for perceived future benefits. When taught correctly, vocational education *is* a liberal art.

We cannot decide how transferable a course is by its label. We must examine courses for the presence of educational arrangements that have the greatest influence on the intellectual, social, and emotional growth of our students. The present critics of vocationalism see the path of specialized skill training as a cul-de-sac; they fail to understand that the value of acquiring technical skills is *not* in the repeated solution of problems identical to those on which one was trained. Technical training is more than blind imitation of the journeyman's responses. The most important goal of the vocational course is the confidence that technical competence gives in attempting challenging *new* problems. Paradoxically, specialized training that generates the courage to tackle a class of risky problems becomes a generalizable liberal art in its contribution to personal growth. If a course helps students develop sufficient confidence to go out and convince adult experts in work settings to entrust them with challenging learning opportunities, that course has had a generalizable or transferable effect. If a course helps students develop sufficient confidence to go out and convince adult experts in work settings to give them responsible assignments that help them continue learning, that course has had a generalizable or transferable effect. If students see a connection between their training and the need for academic skills, and subsequently acquire an increased motivation to study, the training has had a transferable effect. If students have had continued failures in their academic program but still discover an area of competence within themselves, that training program has had a generalizable effect.

The elite reformers who write commission reports on education usually come from comfortable academic backgrounds and probably never experienced, and do not comprehend, the intrinsic rewards of vocational education. They assume that specialized skill training at the lower levels is always a trivial matter, such as learning how to punch the picture of a Big Mac on the cash register. (For some reason, specialized training at the graduate level is exempted from such denigrating assumptions.) There is nothing inherently contradictory between early skill specialization and the transferablility of learning outcomes. Biographies of outstanding individuals who have achieved high levels of human intellectual achievement reveal a strong tendency toward specialization, interest, and commitment at an early stage in life (Howe 1982).

I believe we know enough about optimal conditions for learning to design instruction that will satisfy the goal of transferable outcomes. Three dimensions must be considered: the settings in which learning takes place (home, school, work); the activities in those settings (cognitive, affective, motor); and the consequences of a person's activities in those settings.

The Setting

One aspect of every educational setting that is of vital importance to learning is the availability of a critical mass of desirable *role models*. Learning theory suggests that all kinds of learning take place through the observation of role models. Learners synthesize an amalgam of the modeled behavior to which they are exposed to produce novel forms. It is diversity among models that is often responsible for innovative behavior. Similarly, rules of conduct are abstracted from the many behavior codes that are demonstrated.

The number and quality of models available in a particular setting may vary considerably. Unless there are enough models who exemplify and communicate preferred attributes, less preferred forms of behavior will prevail. If the average level of development in the student's work group is high, its less mature members will develop more rapidly. The absence of the best students from vocational programs deprives these programs of the most essential educational ingredient: a critical mass of pro-achievement role models who show others, by their example, what it is like to be actively involved in the learning process. Even if the instructors are exceptionally capable, the negative influence of peer models will prevail in a program that has been targeted as the dumping grounds for the unfit.[3]

The implications of modeling for the design and evaluation of vocational education raises questions about the number and quality of role models in that program. What is the extent of access to and communication with preferred role models? What proportion of the students are involved and motivated? Are the adults whom students see at their learning sites good at their jobs? What is the quality of supervision in the program? Do the supervisors and instructors at the site spend a lot of time talking to students and giving them information about the jobs they do, or must students learn on their own?

The presence of adult *benefactors* in educational settings may be another crucial element in program effectiveness. Follow-up studies of disadvantaged groups show that many such students have an intermittent work history, mostly in publicly subsidized jobs, but that those who are employed often attribute their record to some benefactor who stayed in contact with them, encouraged and counseled them during bad times, assisted them with problems, and expected more of them than most of their other instructors (Bernick 1983). Thus, in evaluating vocational programs, attention should be paid to the presence or absence of persons who serve as benefactors.

Another important aspect of the educational setting is its *size*. If versatility of experience is important, a smaller setting may be more effective. Students who have not developed an adequate repertoire of coping skills may benefit from participating in small, understaffed programs that give them an opportunity to practice a wider range of skills. In such settings, the student not only has a better chance of learning the complete set of skills that make up the job, but also is exposed to a situation in which group cohesiveness and social interaction are greater. Because learners in such settings are given more important assignments and have more cognitively complex demands made upon them, they develop greater social skills, decision-making abilities, and self-regulation skills (Barker 1968).

Learning Activities

People learn by direct experience. The more challenging the activity and the greater the risk involved, the more they will learn from its successful completion. Activities that challenge people to exceed their normal self-expectations are more beneficial than those which are either

impossible or too easy. Students required to set goals and to establish standards for their attainment are more likely to acquire self-regulation skills (Bandura 1977a,b).

Evaluations of vocational education programs should assess how much *autonomy* students have in their assigned activities. To what extent do the students set their own goals, evaluate their own performance, and direct their own activity? At their work sites, do the students frequently make decisions for themselves? Are students frequently called upon to evaluate the quality of their own work?

An important indicator of the quality of a vocational education program is the extent to which the student is given access to activities that require genuine *responsibility*.[4] The private business sector is willing to provide employment access to high achievers with strong backgrounds in mathematics and science, but is more reluctant to open its doors to youth at the other end of the spectrum except for menial lifting and carrying jobs that have little educative potential. Because such tasks carry no challenge and make no real demands on the individual performing them, they constitute negative learning experiences about work. Some disadvantaged young people display hostile attitudes toward employers and bring to the work place patterns of behavior that are not conducive to the orderly conduct of business. Those students then produce unfavorable reactions that are generalized to all youth, making subsequent access even more difficult to obtain.

Elite reformers assume the solution to such problems is a tough, hard-nosed approach that dictates to students what they must do. Quite the contrary is true. The principal at the very successful George Washington Preparatory High School in Los Angeles notes that they have "a motto of 'We Are Family' which addresses our mutual respect, love, and admiration for each other. Please do not assume that inner city schools will work only if the leadership is tough on kids. . . . The secret to success with students is to be fair, firm and flexible, with an overriding emphasis on providing a caring, humanistic environment where learning takes place with compassion" (McKenna 1983).

Students need access to responsible activities for educational growth. Stephens (1983) has been gathering case studies of youth organizations for the past six years and has found that some of these clubs and group activities have great educative potential. Not only is there a wider variety of such activities today, but their real substance has also increased. Some club leaders now preside over budgets in the thousands of dollars.

Some school districts also provide opportunities for responsibility that do not depend on the private sector. The school-based "development corporation," in which the school district allows students to set up and operate a business, is a model that is already operating in several rural Arkansas communities. Others include worker-owned cooperatives, community development corporations, and union-sponsored programs (Weckstein 1983).

Thus the access problem might be alleviated if vocational programs were not targeted to high-risk students. If a critical mass of students in the vocational education track were highly motivated to work and learn, had pro-social behavior patterns, and shared the dominant values of the culture, employers would be more willing to give open access to educative work experiences and to provide the extra supervision needed for the few troublesome cases. Successful access to learning opportunities in the private sector depends upon the reputation and image of the vocational program. If the program gets labeled as a second chance for losers and if employers get the impression that this is how the schools are foisting off their troublemakers and dropouts, access will be confined to noneducative, custodial activities. The reason why school dropouts have so much trouble finding jobs is their reputation. Even though most jobs can be easily

learned in a few weeks, the dropout label signals other problems such as tardiness, absenteeism, poor motivation, a lack of basic skills, a lack of dependability, and a lack of initiative.

The Consequences of Learning Activities

The consequences of activities largely determine the beliefs and subsequent behavior of students. If their problem-solving efforts and strategies yield positive, highly valued consequences, their sense of self-efficacy will grow as will their interest and persistence in performing the activities (Bandura 1977a). To the extent that they attribute the consequences to their own skills and effort rather than to luck or other uncontrollable external factors, they will acquire a greater sense of instrumentality (Rotter 1954). Feedback is important. If no one tells the students whether they are right or wrong and if no one appreciates their efforts and notes their successes, learning will cease to be enjoyable and the students may lose interest. If, on the other hand, they are given positive and supportive feedback, their expectations and subsequent performance will be heightened. Thus we should examine the extent to which important consequences and feedback are contingent on student performance.

We should also assess the level of stress among participants in the program. Stress is greatest when students have unrealistically high aspirations—when, for example, they are highly motivated to impress their instructors or supervisors, but have little expectation of doing so. Students use their intelligence more when their relationship with instructors or supervisors is nonstressful (Fiedler et al. 1979). Stress inhibits creative and intelligent behavior. Much of this stress can be relieved by *accurate feedback* on student performance and by permission to fail. Negative feedback should be very clear and specific, but the rate of feedback should not be so frequent as to usurp control from the learner. Teachers should be taught to give feedback, but learners must also be taught to receive it; otherwise maladaptive attributions may be conveyed by that feedback.

The goal structure of vocational programs should be evaluated. Interpersonal competition and individualistic work patterns are common in educational programs in the U.S., but studies comparing the effects of cooperative, competitive, and individualistic goal structures on achievement generally favor cooperative programs that provide rewards for group productivity (Johnson et al. 1981). Peer pressure to perform may well be higher in cooperative than in competitive groups, since incompetent members can do more harm in cooperative groups. Vocational education programs offer a unique opportunity for *cooperative goal structures* since most vocational activities are communal enterprises where an individual is dependent on others working on the same project. Such projects are a healthy antidote to the excessively individualized and competitive nature of many academic classes, which tend to erode the sense of community in a school. Students can improve interpersonal skills by communicating and negotiating with others in cooperative vocational projects, especially in service projects that provide tangible evidence of the group's accomplishment in the form of improved facilities, satisfied customers, and respect and appreciation from the recipients of the services. Students who are building a house or remodeling an apartment building must work as a team. They may never choose construction as an occupation and never live in the unit they are building, but its existence is their own creation. In cooperative group projects where participants are encouraged to help each other, everyone is more likely to feel powerful and influential. By way of contrast, in competitive and individual projects everyone is so busy pursuing individual goals that nobody has time to stop and help anyone else; this leads to feelings of powerlessness.

Student satisfaction should also be assessed. In most vocational activities, as in sports and the arts, students seem to participate more for the intrinsic recreational benefits than for future

extrinsic purposes. People take pleasure in doing a job well. The satisfaction of fulfilling the creative urge is not limited to the traditional arts. Students acquire a sense of personal competence by "playing" at being a homemaker, a farmer, a builder, or a mechanic. The *play experience* is a vital element in personal and occupational development. Even though students may be engaged in play-like activities, however, the learning outcomes from these activities are valuable. The consequences that follow from their activities ensure that they will maintain high standards and keep their effort honest from the outset. Students quickly learn that a poorly programmed computer is unforgiving and that careless work must be repeated.

Conclusions

The debate over the value of vocational as compared to academic instruction comes down to the question of transferability of school experiences to work settings. Critics of vocational education assume that basic academic courses are more transferable to a constantly changing work environment than is narrow skills training. Yet knowledge, skills, and attitudes—regardless of where they have been acquired—are not automatically transferred to other settings where they must be applied. The application of education and training to performance in applied settings depends upon the degree of similarity between the training and applied settings. There are at least four ways of establishing this similarity:

- The training can occur in the actual applied setting (e.g., on-the-job training).
- The applied setting can be simulated during training (e.g., occupational programs that simulate realistic social relations, technical facilities, and performance standards).
- The training can emphasize a thorough understanding of the principles that operate in the applied setting (e.g., educational programs that seek to get students to recognize common conceptual themes in a wide variety of new and different settings).
- The training can emphasize the transformation of applied problems, whatever their nature, into a set of problems that are more amenable to a fixed set of symbolic skills that have already been acquired (e.g., the strategy of Reich's paper entrepreneurs in converting product problems into accounting problems).

Such procedures for enhancing the transfer of training are not mutually exclusive, but the fact that each has its costs and benefits often forces us to choose among them. The first option is the most popular one in our society. School credentials serve as union cards for restricted entry to differential training opportunities on the job. This option bears the cost of inequitable access because school tracking practices grant more productive learning opportunities to affluent students who can afford longer schooling. The second choice is more equitable in providing a port of entry for those who might otherwise have no access to desirable on-the-job training opportunities, but is more costly. The public has demonstrated a lack of enthusiasm for expensive training programs that are not associated with high training-related placements. But placement rates are a function of labor supply and demand. As jobs become more scarce and the certificated job-seeking population gets larger, forces are set in motion to raise the age for full-time entry into the primary labor force. A declining economy creates a need to keep youth in school for longer periods. This is accomplished by escalating credential requirements. The crucial sorting decisions for establishing the division of labor for youth are made at ever higher levels. Thus expenditures for elaborate training facilities gradually move to progressively higher educational levels to coincide with the new point of job entry. Vocational training at lower levels becomes more subject to criticism because of the dissonance between their low placement rates and the traditional view that their purpose is to provide economic advancement.

Proposals for school reform strike hardest at high school programs that purport to prepare the very students who are most adversely affected by the economic decline. Such reform proposals emphasize either option three or option four. The third option is difficult to implement, especially with slow and unmotivated learners. It requires extremely talented adults to coach the students and engage them in the thoughtful reflection that is necessary. The fourth option is more feasible to implement, but it is maladaptive and unproductive. It ignores the real problems of product development in favor of more tractable problems of financial redistribution.

I do not think that proposals to eliminate high school vocational training and return everyone to the classic education formerly reserved for restricted elites will solve the problems of equality and excellence. They may well aggravate them and set the stage for further withdrawal of popular support for public schooling. I may be naive, but I still believe in the value of the comprehensive high school. However, we must get rid of the illusion that it can do the whole job by itself. Other institutions must bear their fair share of responsibility. Unrealistic expectations for ever increasing occupational status and higher standards of living for all are fostered in the larger society, yet only the schools are held accountable when such inflated expectations collide with reality.

I agree with current proposals to eliminate tracking, but placing everyone in academic courses will not suffice. All students should have both academic and vocational courses, perhaps fewer of each. The emphasis should be on making those courses more interesting and increasing depth of understanding rather than breadth of coverage. The primary goal should be to maximize the transferability of intrinsic outcomes. Where schools are concerned, that is accomplished by changing the way such courses are taught, and that will only occur if teacher-student ratios change, if teacher compensation levels change, and if adequate time and facilities are provided. It is not possible to operate an educational enterprise with a custodial level budget and staffing structure.

I think we do wonders with our schools and I am always impressed with the dedication of our teachers, but the fundamental problem is that the schools are only part of the total educational system. We must improve the entire system. We need greater congruency of educational purposes among the home, school, work place, and social group. Learning takes place in a total environment. Serious changes in education will not happen with everyone standing around demanding that schools tighten up while they themselves are following a business-as-usual policy. In each of the major educational settings, (home, school, work place, and social group) there must be more shared planning and decision making with students as active participants. Students, parents, teachers, and employers should jointly establish goals, plan and conduct programs, evaluate results, and make necessary changes. Adults must accept the risks of entrusting youth with responsibility. As students develop a sense of proprietorship in *all* their educational settings, apathy will give way to excitement, participation, caring, and concern.

Home, school, work, and social groups must become true learning communities where youth have ready access to adult expertise, share their successes and failures, and where everyone has a proprietary interest in what goes on. That is best accomplished when, in all major educational settings, intrinsic goals are emphasized and activities and consequences are arranged to give everyone some control over their destinies. Only then will we achieve excellence and reduce our technological insecurities. This ideal is not a concrete reform proposal. It is a vision that helps to organize our actions. We may never achieve this vision, but if it gives us some direction it has served its purpose.

NOTES

1. In a recent presentation at UCLA, Marie Eldridge of the National Center for Educational Statistics noted in this regard that there were as many home economic teachers in the public high schools as there were foreign language teachers.

2. Benavot (1983) presents enrollment data indicating similar trends in other countries. The relative share of secondary vocational education has declined in almost every national education system except Eastern Europe and the Soviet Union.

3. The benefits of an integrated vocational program do not all favor the less advantaged students; much can be said for the potential value of the program for college preparatory students. For example, Ivan Charner at the Vocational Institute for Work and Learning has described the value of a "passport" that documents a youth's nonacademic experiences in applications for admission to prestigious colleges.

4. Tom Owens at Northwest Regional Education Laboratory has been interviewing students, teachers, and employers in Oregon to identify how they perceive responsibility and what helps to establish it. The importance of trusting young people with challenging opportunities to make decisions and expecting them to accept responsibility was emphasized in their responses.

REFERENCES AND SELECTED READINGS

Adler, M.J. *The Paideia Proposal: An Educational Manifesto*. New York: MacMillan, 1982.

Bandura, A. "Self-Efficacy: Toward a Unifying Theory of Behavioral Change" *Psychological Review* 84, (1977a): 191-215.

Bandura, A. *Social Learning Theory*. Englewood Cliffs: Prentice-Hall, 1977b.

Barker, R.G. *Ecological Psychology: Concepts and Methods for Studying the Environment of Human Behavior*. Stanford, CA: Stanford University Press, 1968.

Benavot, A. "The Rise and Decline of Vocational Education." *Sociology of Education* 56, (April 1983): 63-76.

Bernick, M.S. *The Dreams of Jobs*. San Francisco, 1983.

Bulcock, J.W., (ed). *The Future of Institutionalized Schooling*. Report on an international conference at the Aspen Institute for Humanistic Studies, Berlin, September 13-17, 1976.

Carnegie Council on Policy Studies in Higher Education. *Giving Youth A Better Chance: Options for Education, Work, and Service*. San Francisco: Jossey-Bass, 1979.

Commission on the Humanities. *The Humanities in American Life*. Berkeley: University of California Press, 1980.

Darcy, R.L. *Vocational Education Outcomes: Perspectives for Evaluation*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1979.

Darcy, R.L. *Some Key Outcomes of Vocational Education: A Report of Evaluation Criteria, Standards, and Procedures*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1980.

Datta, L. "Employment-Related Basic Skills." In *Education and Work*, The Eighty-First Yearbook of the National Society for the Study of Education, Part II, edited by Harry F. Silberman. Chicago: University of Chicago Press, 1982.

Edson, C.H. *Schooling for Work and Working at School: Perspectives on Immigrant and Working Class Education in Urban America 1880-1920*. Eugene: University of Oregon, 1979.

Feldman, S., and Wilson, K. "The Value of Interpersonal Skills in Lawyering." *Law and Human Behavior* 5, no. 4 (1981): 311-324.

Fiedler, F.E.; Potter, E.H.; Zais, M.M.; and Knowlton, Jr., W.A. "Organizational Stress and the Use and Misuse of Managerial Intelligence and Experience." *Journal of Applied Psychology* 64, no. 6 (1979): 635-647.

Ferguson, T. "Successful Women." Ph.D. diss., University of California at Los Angeles, 1982.

Gallwey, W. Timothy. *The Inner Game of Tennis*. New York: Random House, 1974

Howe, N.J. "Biographical Evidence and the Development of Outstanding Individuals." *American Psychologist* 37, no. 10 (October 1982): 1071-1081.

Johnson, D.W.; Maruyama, G.; Johnson, R.; Nelson, D.; and Skon, L. "Effects of Cooperative, Competitive, and Individualistic Goal Structures on Achievement: A Meta-Analysis." *Psychological Bulletin* 89, no. 1 (1981): 47-62.

Kanter, R.M. *Commitment and Community: Communes and Utopias in Sociological Perspective*. Cambridge: Harvard University Press, 1972.

March, J.G. "Model Bias in Social Action." *Review of Educational Research* 42, no. 4 (1972): 413-429.

McKenna, G.J. Letter to *Time* Magazine, Letters to the Editor, 25 April 1983.

Mertens, D.M.; McElwain, D.; Garcia, G.; and Whitmore, M. *The Effects of Participating in Vocational Education: Summary of Studies Reported Since 1968*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1980.

Mirvis, P.H., and Lawler, E.E. "Measuring the Financial Impact of Employee Attitudes." *Journal of Applied Psychology* 62, no. 1 (1977): 1-10.

Notkin, M.S. "Situational Learning in a School with Clients." In Learning to Work, *American Behavioral Scientist* 16 no. 1, (1972): 45-54.

Owens, T.R. "Helping Youth Become More Responsible." Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada, April 1983.

Persig, R.M. *Zen and the Art of Motorcycle Maintenance: An Inquiry Into Values*. New York: Bantam Books, 1974.

Pratzner, F.C., and Russell, J.F. *The Roles and Functions of Vocational Education: Some Current Perspectives*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1983.

Reich, R.B. "The Next American Frontier." *The Atlantic* (March 1983): 52-58.

Rotter, J.B. *Social Learning Theory and Clincial Psychology*. Englewood Cliffs: Prentice-Hall, 1954.

Silberman, H.F. "Noneconomic Returns of Vocational Education." *VocEd* (September 1980): 43-45.

Silberman, H.F. "The Challenge to Vocational Education." In *Education and Work*, The Eighty-First Yearbook of the National Society for the Study of Education, Part II, edited by Harry F. Silberman. Chicago: University of Chicago Press, 1982.

Stephens, W.N. "Explanations for Failures of Youth Organizations." Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada, April 1983.

Taylor, R.E. "Vocational Education." In *Encyclopedia of Educational Research*. 5th ed. Vol. 4, pp. 2002-2012. New York: The Free Press, 1982.

Weckstein, P. "Democratic Economic Development Is the Key to Future Quality Education." *Phi Delta Kappan* (February 1983): 420-423.

QUESTIONS AND ANSWERS

Harry F. Silberman

Question: I feel that there is conflict between alternative instructional methods and trying to cover all the contents. What would you say to the teachers who say they do not have time to teach problem solving and group activities because they cannot cover everything?

I would tell them to stop trying to cover everything. I do not think that you *can* cover everything. I think what is covered should be covered in great depth and with considerable emphasis on thought and reflection.

We do a disservice to our youngsters by racing through all of this subject matter. They are not going to remember everything; even if they do, it would not help them very much. The important point is that they completely understand what they cover. If they are only learning how to answer questions on tests, that is fine, but only if they are going to spend the rest of their lives in school. If you want them to solve social problems, to work as a team, to interact and learn about other people and learn how to get things done, you have to teach them in a different way. Those goals require actual experience with real problems under conditions similar to those in which you hope the learning will be applied.

Question: A great deal of criticism aimed at schools seems to be based on test results. This also seems to be the basis for the *Nation at Risk* report. Do we have any real evidence telling us that the effectiveness of our schools should only be examined in terms of test results? Or are there some other criteria established for success that we should also be looking at? Perhaps we would find that schools are doing much better than we think in regards to turning out successful people.

I point out in my paper that the test results by the National Assessment of Educational Progress revealed that some of the people in the lowest quartile have actually done better during the past ten years than they have previously done. But people in the top quartile have not done as well.

This is a complicated issue. A great many statisticians have been sifting through these test results, and one fact that emerges is the stability of individual differences. Some people are less able than others; they tend to alter the mean test scores. The distribution of test scores depends on how you allocate your instructional resources. If you want to generate an increased mean score on a test, the best strategy is to focus most of your attention on your most gifted youngsters. That will raise the mean because of its effect on extremely high scores. If you are interested in equity, then focus on the slowest youngsters and leave the upper ones alone. They should make pretty good progress on their own. Teachers can close the gap and reduce the variance in that way.

Since we share both those goals, we usually use some kind of compromise strategy, I think most teachers do that intuitively. I suspect by your question that you are hinting that test scores are too narrow a goal and do not cover the really important points. I agree with that.

In my paper, I point out some of the procedures that teachers use to assess whether some of the intrinsic goals are being achieved. Mostly it has to do with watching the youngsters. When I am speaking to a group such as this, I can tell whether you are attentive. I can see a head nod in back. You do not need a test score to find out whether people are benefitting.

I believe part of the emphasis on having everything accountable stems from a fundamental distrust of the educational delivery system and the people involved in that system. Once distrust starts to erode the foundation of what we are doing, no amount of tests, controllers, or inspectors are going to turn it around. We discovered that in industry. You can have all the external quality control you want, but if you have a management that fundamentally does not respect and trust the employees and employees who don't care about quality, you still have problems.

Teachers can sabotage test results very easily. All they need to do is provide the students with the answers. To achieve good test results, they coach them on the test questions. But the students may not learn anything of importance, because the test answers have very little to do with significant learning, only with memorization.

Question: What do you think of performance standards, including performance-based curriculum?

When I was proposing such reforms in the 1950s and early 1960s, I was very high on them. Since then I have become progressively more disenchanted with performance criteria and accountability assessments. Most teachers have a pretty good idea about where their students are on a wide range of different dimensions but can't do much about them for a variety of reasons. There are some obvious places where you have to have some explicit accountability, but in general I think we have gone overboard on the whole notion. I think the fundamental problem is that we do not trust our teachers and we do not provide sufficient resources for them to do the job.

Question: The beauty of these reports is that they are asking education to do a few things and to do them well. They are restoring the simplicity to education. Would you comment on that?

I think that simplicity has a large amount of appeal. Its primary appeal is that it seems to restore a sense of common purpose. It takes away a lot of that painful ambiguity.

Just because we want reality to be simple doesn't mean it will turn out that way. It is not simple to teach socially and culturally different people a common set of outcomes.

Question: What key elements would you introduce into teacher training programs to turn the system back into a trust relationship instead of one of distrust?

I think we should not lean entirely on teacher training programs to solve this trust issue. We should open up the credentialing system and recruit, the same as business does, for top talent. Once we find somebody with the attributes of being a warm human being, a knowledgeable leader with a sharp mind who communicates well with people, we should attempt to recruit him or her.

Trying to shape dull people who have no feeling for children into good teachers may be a lost cause from the outset. We should try to refocus our attention from teacher training to teacher recruitment and selection. I am not talking about choosing among applicants to our teacher colleges, but rather canvassing the country for young leaders and then offering them sufficient incentives to enter teacher training. When we have recruited the best and brightest members of our population into the teaching profession, trust will soon follow.

Question: If shared decision making is parallel to the thrust of the quality-of-work-life literature, do you see this as an aspect that we should be examining in our schools?

If you look at the fact that our large employer, mass production types of industries are being gradually exported to countries with cheaper labor markets, it is obvious that the only large productive organizations that are going to continue here will be highly flexible, automated industries with "flat" decision-making structures. Management will need to be very close to the working floor. Managers will need the democratic skills to listen to employees' ideas. As we lose our preferred position in the international marketplace, I believe you will see more and more democracy in the American work place—not for idealistic principles, but because it pays off. And when you see it happening in industry, it will eventually happen in that other place of work—the school.

Question: The literature on job satisfaction and its relation to production says there isn't much relation between them. Accountability mechanisms introduced closely parallel the rise and fall of productivity. At what point are accountability mechanisms useful to increase productivity without making psychological basket cases out of workers?

First, the literature on job satisfaction is very problematic because when you measure job satisfaction it is always in reference to some personal expectation. Expectations tend to change as a function of the consequences of one's actions. For example, when your job expectations are not realized, your expectations drop and you acclimate yourself to your situation. Once you have accepted your situation, you may respond that you are satisfied with your job on a questionnaire. Similarly, if your conditions greatly improve, your expectations also rise; it is the nature of the human being. When asked whether you are satisfied with your nice job, you are likely to register some dissatisfaction because you now expect something even better.

Secondly, when you are looking for a connection to productivity, you have to ask what measure of productivity you are using. Are you using the profits of the firm from a stockholder's perspective, or the enhancement to the individuals and families working with that firm, or the quality of life in the community where that firm resides? If you believe that the function of the individual is to serve the firm, you come out with one kind of productivity measure. If you presume that the function of the firm is to serve the community's quality of life, you come out with a different productivity measure.

If we used a job satisfaction measure that accounts for changing expectations and a productivity measure that reflects the quality of life in a community, I think we would find a positive relationship between job satisfaction and productivity, and a negative relationship between primitive accountability measures and productivity.

Question: Although the *Nation at Risk* report did not explicitly state anything about vocational education, it implies that vocational education has become diluted, confused, and

has lost its central purpose. When I look at your goal areas for technical skill and knowledge, communication skills and literacy, and personal skills and attitudes, it seems that they overlap quite a bit with the five new basics mentioned in that report. Why do you think this overlapping should exist and why don't you think the five new basics can accomplish these goals?

I don't think that the distinction between vocational and academic course labels is very helpful. What I am trying to suggest in my paper is that whether or not you achieve those three types of goals is a function of how the course is taught. You cannot tell by the label of the course, whether it be history or biology or construction, what goals are being achieved. To say that I am teaching technical knowledge does not really tell you anything until you see what I am doing to teach that technical knowledge.

If I am teaching a biology course and I take my students into the community to test the health practices of the local restaurant and make recommendations to the management, I may encourage those youngsters to feel that they can make a difference, that they can affect a community problem, that they have some influence in the community. If the students have some responsibility and experience significant consequences, then you may achieve those three types of goals, whether the course has a vocational or academic label. Students will not achieve those goals by merely listening to the teacher talk and by answering the questions at the end of the chapter. In other words, you cannot tell what students will actually learn by the course objectives. To quote Dewey again, "The ends are inherent in the means." That is one of the messages of this paper.

Question: Why can't the basics achieve that? Then you wouldn't need vocational education. What is unique about it?

I think there are certain activities that vocational education provides that are very difficult and probably not very practical to provide in normal academic courses. I think when you have a cooperative project to build something that has a tangible outcome and provides some satisfaction to a recipient of that product, then you are laying the groundwork for teaching not only technical skills, but a sense of altruism on the part of the youngster, and a sense of pride in the beauty of the product he or she has built. Those are the critical dimensions that change youngsters and make them into mature adults and that is what can be achieved with vocational courses if properly taught. Because of the nature of the vocational subject matter, it may be more possible to achieve some of those outcomes than it would be in, say, a trigonometry course, though I believe such outcomes are also possible there.

Question: Could you please summarize what your goals for education are again?

I have specified three classes of goals: technical knowledge, communication skills, and a set of personal skills or outcomes. It is that third category that I am most concerned with. In it I include autonomy, courage, and cooperativeness.

Question: You indicate that student stress can be relieved by giving students permission to fail. How is failure in any context considered to be a good thing?

If you know that it is okay to make mistakes, then you are more likely to take the actions that will allow you to learn. If you have ever noticed the difference between adults and children taking a

microcomputer class, it is very interesting. The adults are so afraid of failure that they can hardly learn. The children figure it is all right to make a mistake and learn from their mistakes.

What I am suggesting is that we have to get off this kick about not being able to fail. If people feel it is okay to fail, on occasion, especially during learning, that will reduce their stress and make them more intelligent. I think the problem with most people who get older is that they are too afraid to try things that may teach them something, but that will mean making mistakes at first. They avoid learning situations. Watch the way adults operate when there is a new tricky game that may test their intelligence in public. They avoid it.

Question: I would like to know more about what is happening in education in California, since California is a trend-setting state. I have heard that high schools are dropping vocational programs and are relying on the community colleges to do it. What is happening there, and what do you think are the implications for the rest of us?

What has happened recently is that the Assembly of the California Legislature has come out with a report that suggests that all the skill training at the high school level, with the exception of homemaking, typing, and possibly consumer autoshop, should be turned over to the regional occupation programs or regional occupational centers. The regional occupation program, as you know, is an area vocational program. The regional occupational program will itself be reviewed by the Private Industry Council. So what is apparently happening in California is that the high schools will be getting out of specific skills training and will hand that over to the regional occupation programs. In my opinion the regional occupation programs in California do an excellent job of preparing people with technical skills and assisting them in becoming more employable. But I have two reservations about the change. First, it will tend to increase the centralization of control over vocational education. I think that this will eventually subordinate the intrinsic educational goals to the extrinsic outcomes that I talked about earlier.

My second concern is that the change may lead to increased tracking. The students will have to leave their school for part or all of the day and go to a separate regional occupational program. That will take those students out of the local school, separate them from the college prep students, and further exacerbate the tracking problem.

Of course, it is much cheaper to run a regional program than replicating the program in every school. It will probably also mean that the occupational program will be much more selective, because there will be more applicants than spaces. We may get a better class of students but, at the same time, we may have less vocational training.

In other words I see the restriction of vocational education to the regional occupational program as a retrenchment move. Who is to say what is to happen in the next several years with the ROP budget? Unless the ROP budget is increased to correspond with the growth in enrollment of high school students in the program, vocational education will have declined as a result of this change. If this can happen in California it can also happen in other states.

Question: I would like to return to the trust/distrust issue. How likely do you think it is for the President's version of a merit system to pay teachers to be implemented around the country? And if you think it is likely, what is its impact likely to be on the trust system?

There is a difference between merit pay and extra pay for teachers in areas of shortage, such as math and science. To offer greater incentives to attract employees in areas of short labor supply is standard practice in a free economy. I think there will be more respect and trust in teachers if the public is convinced that the best qualified persons have been found for the job. I would like to see school districts offering salaries for their math and science teachers that are competitive with the most elite corporations in our society. On the other hand, *merit* pay has serious measurement problems. Universities use peer review systems that focus on research and writing productivity rather than teaching. Merit pay often degenerates into automatic increases to avoid divisiveness and mistrust. Its only function then is to send a message to the very worst teachers. I think we have to proceed with great caution on this issue.

Question: We have heard a lot about educational technology for a number of years, but trends really seem to be coming together in the communications areas. How does that influence this whole situation? I do not remember anything in the *Nation at Risk* report on what educational technology can do for us in the way of instruction.

The *Nation at Risk* report does have something, as I remember, about teaching computer skills as one of the basics. I do not have a "gee-wiz, golly-ain't-it-grand" attitude about educational technology. I spent too many hundreds of hours in the 1950s and 1960s trying to make it happen. You can, on a special grant basis from the federal government, produce a piece of pretty good software, but when materials development is picked up commercially, it is more profitable to imitate the form of the product than use the repeated empirical test and revision procedure necessary to produce quality materials. In the late 1960s, firms sold materials that they claimed had been learner-verified, when in fact they simply imitated the format of engineered material. Teachers found them ineffective and ceased using them.

There is no question that investment in the improvement of instructional technology will eventually yield valuable returns, but we should go beyond the band-wagon hype and examine possible side effects before rushing ahead with every new technique. For example, if children become totally dependent on computers before they learn basic math they may lose something that is difficult to replace. Then there is the problem of children separately dealing with a terminal rather than cooperating and developing team skills with one another. A balance is needed between individualized instruction and group work. Technology such as the television has also separated children and taken them away from group interactions. And most television programming is certainly not conducive to the intellectual and social development of the viewer.

On the other hand, maybe technology in the future will have positive consequences. For example, if we decentralized the work place and people worked at home on their terminals and had teleconferencing, maybe we would reestablish the home and family. That development could revolutionize education. It is also not such a far fetched idea when you consider the cost of energy and the growing pollution problem in the urban areas; there is a lot to be said for moving the work place back into the home and communicating by terminals. As I mentioned in my paper, the family, peer groups, the community, the schools, and employment settings, all play important roles in education. Technology will enhance education to the extent that it brings those settings together to achieve common goals.

Question: I like your idea that education can take place in other than the formal classroom. One of the things I think we're never given credit for in vocational education is what we do with students and student organizations. I am wondering what is going to happen in California, because much of the leadership comes from those student organizations. Would you talk a little about that?

The real heart of vocational education is in youth organizations. Probably the best education going on occurs in well-run youth organizations. I do not think they will go away. I think the parents would really raise a storm if anyone tried to eliminate them, because everybody knows when something is good. You can cut something that is marginal, but those youth organizations can be very educative.

Question: The *New York Times* and the *Wall Street Journal* recently reported that, in terms of the SAT, the least intellectually able students tend to go into teacher education on college campuses. What advice do you have, or what is your response to that charge, in terms of improving the quality of teacher education programs in the country? My second question is in regard to Governor Alexander of Tennessee calling for a project in that state to develop a system where there is a master teacher, a professional teacher, and an apprentice teacher, and where promotion is contingent upon the peer review process. Would you comment on that, also?

My answer to the first question about how you get better people into the teaching profession is to increase the pay, increase the status, and improve the working conditions. That means somebody has to make a sacrifice. The taxpayers have to be prepared to do that. They are apparently not yet unhappy enough with the schooling they are getting.

A generation ago, some of the women who were the best and brightest of the group went into teaching because there were few other professional opportunities available for them. Today, women are going into medicine, law, management, and other fields, so that may partly explain the drop in ability.

In response to whether it is desirable to produce a vertical career ladder among teachers, I have mixed feelings. I am afraid that we will produce something akin to what has happened in the nursing profession: some of the best nurses become more removed from the patient. Working with patients has become a low-level function.

To some extent that practice imitates the worst part of our industrial sector. As you move up in the organization, you no longer deal with the product. I wish we could somehow provide the status and compensation for talented workers without creating a new hierarchical management structure that removes them from the product.

In education, most of the administrative people who are downtown at the main school offices are people who used their talents to work their way up from the classroom. I would just as soon not establish incentives for the better people to leave the classroom. Finally, there is the problem of how the master teacher would be selected. The peer review process can be very political and devisive if not handled carefully.

Question: May I rephrase my first question? Do you think teacher education institutions have been lax in standards in terms of accepting students into them? And if so, what advice would you give to prospective students?

I don't know whether teacher education institutions in general have been lax in accepting people who are unqualified. I cannot speak for the field, because I do not know it. I do know that at UCLA we give applicants examinations and we are very strict. I had fifteen teacher trainees in my educational psychology class this past year and I think only nine or ten of them finished. We graduated them several months ago, and from my observations of their classroom teaching

performance, I would stand behind every one of them. But that is just one small program at UCLA.

Question: Given that we really need to increase salaries and get the people in teaching we want, we are probably talking about doubling the basic teacher salary. Can we afford that and, if we can afford it, are we willing to do it?

I think the last question comes first. If we are not willing to do it, we cannot afford it. I mean, can we afford to spend $100 million in one week to see *Return of the Jedi*? Well, we did. Can we afford to scrap one MX missile and put that money into education?

I tend to be a short-term pessimist and a long-term optimist. I think that as problems get worse we will be willing to do what is necessary to solve them, but not before. Human beings tend not to have the ability to anticipate the long-range aversive consequences of short-term greed, but successive generations have clearer vision of the problems and are more inclined to attempt solutions.

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